

Final Report:
Introduction to Map Study: The Globe
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APH

American Printing House for the Blind
1983

Department of
Educational Technology

Running head: Introduction to Map Study

Globes are used simultaneously with maps to demonstrate the curvatures, locations, and relative sizes of the various continents and features on the earth. Young sighted students are introduced incidently to map study components in kindergarten and the primary grades and accumulate a reservoir of relevant visual conceptual information. When more formal presentation occurs at third or fourth grade, they are prepared to synthesize information received from concrete experiences. However, the limited environmental experiences of blind students are difficult to relate to abstract representation because of the highly visual and abstract nature of globes and maps and the skills involved in using them. A further complicating factor for blind students is that their first introduction to globes and maps often is in a social studies context without adequate prior exposure to and manipulation of tactile maps and globes, and without specific instruction relating symbolized features to their environmental counterparts.

Generally, emphasis on use of globes and maps in social studies has emphasized goals and objectives related to student performance upon completion of an instructional module. Focus on determining what knowledge or skill is required in order to begin--prerequisite skills and concepts in globe study--is minimal or lacking. Blind students too often are faced with learning social studies content at the time they are introduced to globes and maps.

Project Objective

The objective of this project was the development of materials to introduce basic concepts underlying map and globe study. The instructional activities introduce a variety of tactual and conceptual experiences which are prerequisite to the acquisition of basic globe skills. Each lesson

isolates map study components which specifically relate to use of the globe. The basal information proceeds from environmental representation and orientation through globe skill and concept development activities to application of entry-level skills using the map and the globe. Upon successful completion of the program, the student has received orientation to globe study and to relating the continent of North America on the globe to the continent of North America on the simplified continental relief map.

Materials Description

The program sequence follows the traditional "near to far" pattern of map study content--widening the student's horizons, beginning with the immediate environment and moving out to the school community, and finally, the world community. The activities follow a sequence designed to familiarize students with basic operations in four areas: Scale and Distance Symbols, Shape and Size, and Orientation (location and direction). The activities progress through three levels, from the concrete to the abstract, as detailed in the Scope and Sequence chart.

Level I activities (Lessons 1-9) develop environmental awareness through observing and exploring natural and cultural geographical features. This allows locational and directional referents to be used in the student's environment prior to their use on the globe. Environmental representation is introduced with the use of toys and models of real objects.

Level II activities (Lessons 10-18) relate locational and directional referents to identification of geographical features and movement on the globe, using a simplified continental relief map of North America.

| Strands | Level I--Environmental representation and orientation | Level II--Globe skill and concept development | Level III--Globe skill and concept application |
|--------------------------------------|--|--|---|
| Scale and Distance | Expressing relative scale and distance using large and small and near and far Recognizing that toys are small-scale models of real things | Inspecting different-sized globes that represent the earth Understanding that long distances on the earth are short distances on a map or globe | Recognizing that big areas are relatively big and small areas are relatively small on the globe Observing that the equator is halfway between the poles |
| Symbols | Developing environmental awareness through observing and exploring natural and cultural features | Identifying land and water areas on the map and globe Finding mountains, flat land, and oceans on the map and globe | Determining from globe inspection that there is more water than land on the earth Exploring coastlines and water areas on the map and globe |
| Shape and Size | Using small objects and toys to represent large objects Understanding that the earth is made up of land and water areas Examining the globe to learn that the earth is round | Determining that North America represents a large land area on the globe (earth) Relating the continent of North America on the map to the continent of North America on the globe Using relative locational referents on the map of North America and on the globe Using locational referents on the globe with North America as the reference area. | Comparing the land area of North America on the map and globe |
| Orientation (Location and direction) | Locating self in relation to objects in the environment Describing relative locations of objects by using the terms near, far; left, right; up, down; over; around Using these locational and directional referents in the environment | Identifying and locating North Pole, South Pole, and equator on the globe | Understanding that north is toward the North Pole and that south is toward the South Pole on the globe Recognizing north and south directions from the equator on the globe Understanding that when facing north, south is behind, east is on the right, and west is on the left Using north, south, east, and west as directional referents on the globe with North America as the reference area |

Level III activities (Lessons 19-27) apply the basic skills and concepts introduced. The student demonstrates his acquisition of these skills and his knowledge of globe generalizations by performing the tasks presented in the activities.

The instructional materials include a student activities guidebook and a 12-inch geo-physical globe mounted on a stand. The guidebook contains information for the teacher, student activities, and a Globe Concept and Skill Analysis for administration to the student upon completion of the program. A Simplified Continental Relief Map of North America (APH No. 1-0141), which is not included, was used in the field evaluation and is an essential component of the program. Numerous concrete objects and materials from the environment are suggested in the activities.

Procedure

Nine teachers who critiqued the instructional activities used them with day school students in the primary grades. The number of legally blind students varied from 3 to 6 for each teacher, generally. Teachers evaluated each activity as they used it with students. They also used portions of the program with older students when they wished to determine if students had acquired specific concepts.

Teachers evaluated 30 Prerequisite Skill activities composed of tasks involving conceptual information and skills. They also participated in an interview upon completion of their evaluation.

Results and Discussion

The project staff went through the copies of activities returned by the evaluators in preparing the final instructional program. Each activity was examined and compared with those in the evaluations. Activities in each level of each strand were reviewed for appropriateness and accuracy. Strands overall were reviewed and examined in terms of the project objective. A number of the suggestions from teachers included activities and concepts beyond the scope of the project. Instructional activities were reduced to a minimum number considered critical for introducing the encompassing concept referred to as the globe-to-map, map-to-globe concept in this program.

Teachers were unanimous in their approval of the instructional materials and responded affirmatively to the sequence of concepts and activities. They indicated that the concepts are stated clearly, that concepts are effectively illustrated/demonstrated in the activities provided, and that the sequence is easy to follow.

The Prerequisite Skill Activities focus on minimum skills and knowledge the student should possess in order to begin map study. Teachers indicated that this section states instructions to the teacher adequately, specifies the performance tasks (activities) explicitly, and relates the performance tasks to the locational/directional referents and operations presented in the instructional program. Teachers had few if any suggestions for change of any specific summary activity. They were unanimous in interviews that these activities specify the performance tasks (activities) explicitly, that they relate the performance tasks to the locational/directional referents, that the

activities specify the performance tasks (activities) explicitly, and that they relate the performance tasks to the locational/directional referents and operations presented in the instructional program.

Teachers also were unanimous in their endorsement of the globe mounted in the stationary stand which can be rotated by students without losing basic reference points (North Pole, South Pole). Teachers indicated that the size of the globe is adequate for presentation of the concepts. Students are able to inspect the land and water areas with fingers and with palms, to determine distances using hand-widths, and to establish other size and distance relationships using fingers and hands. They indicated that this inspection and manipulation is facilitated by the stability of the globe.

Teachers indicated that the globe was durable enough for use by young students. Most teachers reported no exceptional damage with general use. They let the students use the globes extensively and unsupervised. Some even allowed students to take the globes home.

Students were able to distinguish between land and water on the globe. However, a number of problems arose in identification of various land areas (hills, mountains) when there was not a great difference in elevation. Teachers reported difficulties in locating lakes and rivers and in using latitude and longitude lines on the globe. These concepts are not part of the globe program--they are beyond the prerequisite concepts and skills emphasized in this program. Most teachers requested that the two small globes of different sizes be included to reinforce the concept that globes of different size represent the earth and to introduce other concepts in scale and distance.

References

Franks, F. L. Introduction to Map Study: Teaching locational and directional referents to young blind students. Doctoral dissertation, George Peabody College for Teachers, 1974.

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